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## University of Bath

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Study/ Year	Osteotomies (patients)	Age (years, range)	Follow-up (years, range)	Survival % (no. converted to THR)	Functional Outcome Result	Prognostic Factors
Siebenrock <i>et al</i> / 1999	75 (63)	29 (13 – 56)	11 (10 – 14)	10yrs: 84.6% (n=13, 18%)	M d' Aub: 16.3 (12 – 19)	Grade of OA, age, poor correction
Matta <i>et al</i> / 1999	66 (58)	34 (19 – 51)	4 (2 – 10)	(n=8)	17% Excellent 59% Good	Grade of OA
Trumble <i>et al</i> / 1999	123 (115)	33 (14 – 54)	4 (2 – 10)	(n=7)	HHS: 89 M d' Aub: 16.3	Pre-op Tönnis grade Poor correction
Kralj <i>et al</i> / 2005	26 (26)	34 (18 – 50)	12 (7 – 15)	(n=4)	WOMAC: 30	Pre-op Tönnis grade Post-operative normalised peak contact stress as per model
Clohisy <i>et al</i> / 2005	16 (13)	18 (13 – 32)	4	100%	HHS: 91	False acetabulum
Steppacher <i>et al</i> / 2008	75 (63)	29 (13 – 56)	20.4 (19 – 23)	10yrs: 84.6% 20yrs: 60.5% (n=27)	M d' Aub: 15.8 (10 – 18)	Age Positive impingement signs Grade of OA Insufficient acetabular cover
Matheney <i>et al</i> / 2010	135 (109)	27 (10 – 45)	9 (7 – 11)	5yrs: 96% 10yrs: 85%	WOMAC <sub>pain</sub> : 2.4 (0 – 16)	Age >35 Poor congruency
Hartig-Andersen <i>et al</i> / 2012	401 (316)	34 (13 – 61)	8 (4 – 12)	12.4 yrs: 74.8% (n=69, 17%)	WOMAC: 22 (0 – 78)	Age Grade of OA Achieved CEA Incongruence

Table 1: Studies reporting on survival, outcome and predictors of failure following Bernese-PAO.

Parameter		Value
		Mean (SD, range) or number (%)
Age		25.3 (7.1, 15.0 -41.3)
BMI		24.0 (3.0, 17.1 – 32.2)
Gender	Male	8 (14%)
	Female	49 (86%)
Diagnosis	Dysplasia	65 (96%)
	Other	3 (4%)
Previous Surgery	None	52 (76%)
	Closed procedures	5 (7%)
	Femoral osteotomy	6 (8%)
	Pelvic osteotomy	5 (7%)
	Arthroscopy	2 (2%)

Table 2: Demographic and surgical data of the cohort

Characteristic		Value
		Mean (SD, range) or number (%)
Acetabular Index/ (°)	Pre-op	13.0 (7.5, 2 – 32)
	Post-op	8.5 (8.6, -10.6 - 26)
Centre-Edge Angle/ (°)	Pre-op	15.9 (7.5, 1 – 26)
	Post-op	24.0 (8.7, 6 – 44)
Joint Space/ (mm)	Pre-op	3.3 (2 – 5)
	Post-op	3.3 (2 – 5)
Congruence	Yes	35 (51%)
	No	33 (49%)
Tönnis Grade	0	37 (54%)
	1	22 (33%)
	2	9 (13%)
	3	0
Target AI achieved (<15°)	Yes	46 (68%)
	No	22 (32%)
Target CEA achieved (20 – 40°)	Yes	41 (60%)
	No	27 (40%)
Target achieved for both AI and CEA	Yes	40 (59%)
	No	28 (41%)

Table 3: Radiographic characteristics and measurement of the cohort. Of note, no pre-operative assessments could be made on 21 patients.

Parameter		Value
		Mean (SD, range) or number (%)
WOMAC – pain		2.6 (2.9, 0 – 11)
WOMAC – stiffness		1.3 (1.7, 0 – 5)
WOMAC – physical activity		7.7 (10.2, 0 – 41)
WOMAC – total		11.9 (13.9, 0 – 54)
Satisfaction Score	Disappointed	1 (2%)
	Not satisfied	1 (2%)
	Fairly satisfied	10 (15%)
	Very satisfied	42 (61%)

Table 4: Radiographic characteristics and measurement of the cohort. Of note, no pre-operative assessments could be made on 21 patients.

Parameter		10-yr survival (worst case) Mean % (95% CI)	p - value	WOMAC <sub>total</sub> score Mean (SD, range)	p - value
Hip congruence	Yes	100	0.03	6.5 (7.4, 0 – 28)	0.01
	No	78.3 (61 – 95.6)		17.5 (16.7, 0 – 54)	
Tönnis Grade	0	96.2 (88.8 – 100)	0.11	9.2 (13.1, 0 – 54)	0.02
	1 & 2	79.3 (62.8 – 95.8)		15.3 (14.4, 0 – 51)	
Joint space	<3mm	68.6 (36.6 – 100)	0.37	21.6 (18.4, 3 – 54)	0.03
	≥3mm	89.5 (78.0 – 100)		9.5 (12.4, 0 – 51)	
AI: < 15°	Yes	100	<0.001	7.2 (7.1, 0 – 28)	0.005
	No	65.3 (42.5 – 88.1)		25.1 (19.2, 0 – 54)	
CEA: 20 – 40°	Yes	100	0.04	6.8 (6.9, 0 – 28)	0.005
	No	71.9 (52.8 – 100)		22.7 (18.5, 0 – 54)	
Optimum AI and CEA	Yes	100	0.005	6.9 (7.0, 0 – 28)	0.01
	No	72.4 (53.3 – 91.5)		21.6 (18.5, 0 – 54)	

Table 5: The effect of radiographic parameters measured on clinical outcome. AI: Acetabular Index, CEA Centre-edge angle.

		Desired radiographic target acheived (AI 0 – 15°, CEA: 20 – 40°)	
		Yes	No
<b>Experience level (case number group)</b>	1 – 20	6	14
	21 – 48	20	8
	49 – 68	14	6

Table 6: Effect of experience on the radiographic correction achieved (p=0.008).